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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,699	09/15/2003	Agne Swerin	IP 023445	1036

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EXAMINER
MAYES, DIONNE WALLS

ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/662,699	SWERIN ET AL.	
	Examiner	Art Unit	
	Dionne Walls Mayes	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/8/2006 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner is not sure what Applicant intends by the limitation "the thickness of the central layer/fibrous web layer compared to the thickness of the paper or paperboard is between 1:50 and 1:1.1", when in the instant specification it states that the "*film thickness of the starch coating layers* to the paper is between 1:50 and 1:1.1" (see instant specification page 7, lines 4-5). Clarification and/or claim amendment is requested.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,4,5,7-14,16,19-21,23-27, and 29 are rejected under 35 U.S.C. 102(b) as anticipated by Sandstrom et al (US. Pat. No. 6,379.497).

Sandstrom et al discloses a three layer single ply paper board. The central layer is a high-bulk layer containing bulk enhancing additives such as microspheres (which includes the claimed "vinylidene chloride" of claim 7), chemically-treated high bulk fibers and other bulk enhancing additives (see columns 6 and 21). Retention aids, binders, and fillers are also disclosed as being used in the paper (see columns 34 and 35). The surface layers of the board are surface sized/coated with starch or epoxy resins (corresponding to the claimed "crosslinking agents" of claim 11) – which can contain pigments (see columns 5,12,13,18,21,31). The size or coating composition depends on the kind of article for which the paperboard is used, but when starch is selected as the sizing agent, the solids content is preferably between 20-40% (corresponding to the claimed "between 6% and 20%" of claims 5, 27 and 29). Also, Sandstrom states that the paperboard structure is an I-beam structure (see col. 39, line 19). Thus, Sandstrom anticipates the claimed invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2,3,6,15,17,18,22,28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandstrom et al (US. Pat. No. 6,379,497).

Regarding claims 2,3,15,17 and 18, it would have been obvious to employ the claimed thickness and weights as it depends on the type of article or final product for which the paperboard is intended.

Regarding claims 6 and 22, the use of the claimed diamide salt as the bulk enhancing additive in Sandstrom et al would have been obvious since it is a conventional and commercially available bulk enhancing additive as evidenced by page 6 of the instant specification.

Regarding claims 28 and 30, it would have been obvious to one having ordinary skill in the art at the time of the invention to have arrived at the claimed starch solids range, after routine experimentation, in order to provide an optimal moduli of elasticity to the layers.

Response to Arguments

8. Applicant's arguments filed 6/20/2005 have been fully considered but they are not persuasive.

- Applicant argues that the Sandstrom et al reference teaches away from an I-beam structure when using higher than "typical" weight % of size press-applied starch solids, and when there is starch penetration into the central cellulose paper layer; however, the Examiner disagrees and finds no evidence of this. Col. 39, lines 14-20, of Sandstrom clearly states that its paper is believed to generate an "I-beam" effect, due to the combined effect of bulk-enhancement and application of size at a high-solids level, that improves bending stiffness of the paper. There are a myriad of patents that suggest, if not state, that an "I-beam arrangement" in paper products occurs when outer layers exhibit high strength/density compared to the central/core layer of cellulosic fibers which exhibit low density, but increased bulk (See, for example, Chadha – US. Pat. No. 5,649,478). There is every indication, in Sandstrom, that its paper product exhibits these qualities – even though there is starch penetration into the inner core layer, and a higher starch-solid content. Just because there may not be explicit "performance data", found in the examples or elsewhere in the reference, to "prove" the assertion that an "I-Beam effect" occurs does not indicate that such is not the case – even given the fact that starch-solid content is higher or that there is penetration into the core. Throughout the reference of Sandstrom, it is clear that the layers of its paper product, due to the size-press starch is intended to be thicker – which gives it a higher moduli of elasticity – to improve bending and tensile stiffness. This allows for the desired paper rigidity even when a reduced weight of papermaking fibers is utilized (See col. 30). Sandstrom then indicates, further in the reference, that the true function of this arrangement in col. 39,

line 14-19 – is that of an " I-Beam effect" – and the Examiner believes that there is no indication that any one particular embodiment would *not* have this effect.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne Walls Mayes whose telephone number is (571) 272-1195. The examiner can normally be reached on Mon-Fri, 7AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dionne Walls Mayes
Primary Examiner
Art Unit 1731

February 16, 2006